



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,168	11/20/2003	Peter F. Symosck	H0003798 (1100.1204101)	9337
128 7590 07/13/2007 HONEYWELL INTERNATIONAL INC. 101 COLUMBIA ROAD P O BOX 2245 MORRISTOWN, NJ 07962-2245			EXAMINER GEBRESILASSIE, KIBROM K	
			ART UNIT 2128	PAPER NUMBER
			MAIL DATE 07/13/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/718,168

Applicant(s)

SYMOSEK ET AL.

Examiner

Kibrom K. Gebresilassie

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2007.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-9 and 23-32 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 7-9 and 23-32 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 04 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to amended application filed on 05/04/2007.
2. Claims 1-4 canceled.
3. Claims 5, 6, and 10-22 are withdrawn.
4. Claims 7-9 and 23-32 are pending.

Response to Arguments

5. Response to Objection to the Specification: The specification is amended to overcome the objection made on the previous Office Action mailed on 02/06/2007 for minor informalities and therefore the objection is withdrawn.
6. Response to Drawing Objection: The drawings are amended to overcome to overcome the objection made on the previous Office Action mailed on 02/06/2007 and therefore the objection is withdrawn.
7. Response to Claim Objection: Claim 30 is amended to overcome the objection made on the pervious Office action mailed on 02/06/2007 and therefore the objection is withdrawn.
8. Response to 101 rejection: Claim 7 is amended to overcome the rejection made on the pervious Office Action mailed on 02/06/2007 for being non-statutory. However, adding a "computer system" could not make the claimed invention statutory. It is still software modules (See: **Claim Rejections - 35 USC § 101**). Further, a "computer system" is not described in the specification and raises ^{the issue of} ~~a~~ new matter (See: **Claim Rejections - 35 USC § 112**).



Art Unit: 2128

9. Response to 103(a) rejection: Applicant's arguments filed 05/04/2007 have been fully considered but they are not persuasive.

a. Applicants argued:

12-15 and Fig. 20 for support. Applicants respectfully disagree. Flanigan does not appear to teach a chemical agent detection environment simulation, as is recited in independent claim 7.

In response, Flanigan et al teaches:

Col. 3 lines 12-15 states as follows:

An object of the invention is to provide a system and method for remote detection of hazardous clouds (vapors and aerosols) that avoids the above-noted deficiencies of the related art.

also

Col. 4 lines 40-47:

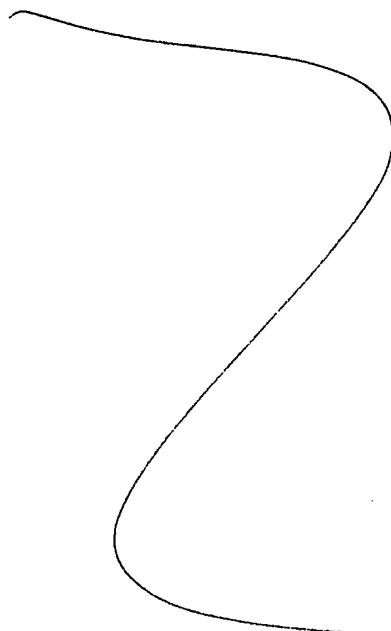
The present invention finds utility in the imaging of clouds composed of hazardous vapors or aerosols in situations where a high level of importance is placed on detection and warning, such as chemical warfare defense or protection of civilians in the wake of chemical plants. The invention finds further utility for emergency management in hazardous spills and for monitoring suspected terrorist activities, drug processing, and chemical manufacturing.

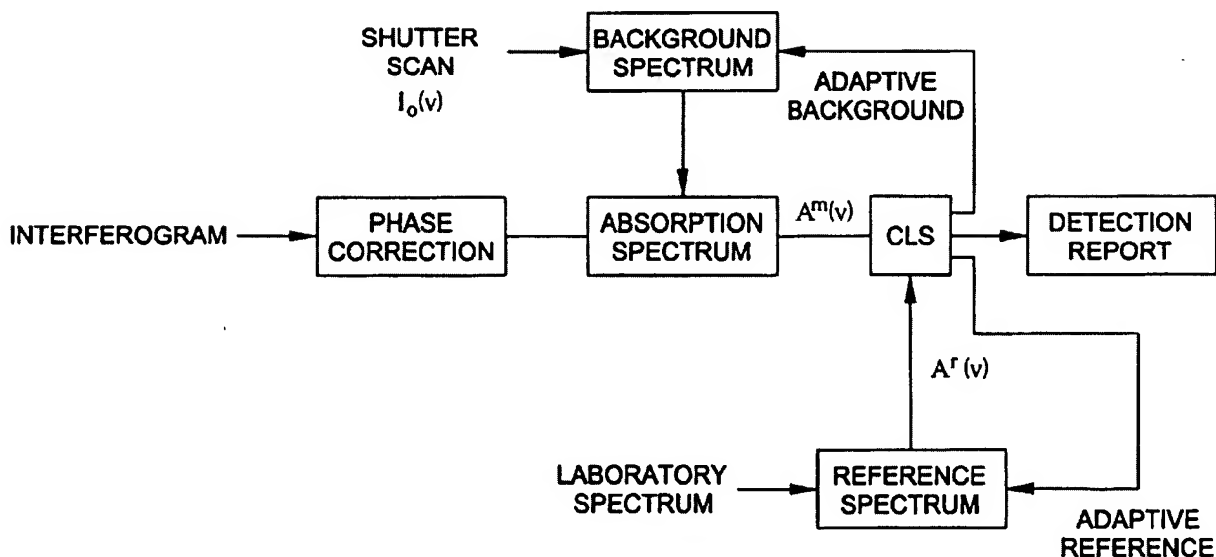
b. Applicants argued:

of the FTIR systems, there is no motivation for the skilled artisan to combine the teachings of Wang et al. with Flanigan. Flanigan appears to teach away from such a combination.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by

combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, a clear motivation based on the nature of the problem to be solved, and knowledge of a skilled artisan exists. Both references are clearly concerned with detecting of chemicals agents in the atmosphere. Flanigan et al teaches the calculation of the background and atmospheric transmittance using software such as MODTRAN (**See: Col. 5 lines 2-5**). However, Flanigan et al is silent whether a background measurement environment interferogram source connected to the chemical agent detection environment simulation device. Wang et al discloses a background measurement environment interferogram source connected to the chemical agent detection environment simulation device (**See: Col. 7 lines 11-21; and Fig. 6 below**).





c. Applicants argued that because Flanigan et al teaches the disadvantage of the FTIR system and Wang et al teaches the advantage of FTIR system, Flanigan et al appears to teach away from such combination.

In response, this analysis is ~~wrong~~ ^{incorrect}. Teaching that something is disadvantageous is not teaching away. These two prior arts have a common thread, which is to detect chemical agents before hand using different techniques. Therefore solving the same problem using different techniques is not teaching away from each other.

d. Applicants argued:

Regarding claim 23, neither Flanagan nor Wang et al. appear to teach a simulated sensor output. The language quoted by the Examiner on page 7 of the Office Action with regard to

In response, Wang et al teaches:

Col. 11 lines 49-56:

The alternative reference spectrum which is selected has a much higher concentration-pathlength level, for example, 1000 ppm-m, and more closely simulates the saturation condition existing in the environment. The alternative reference spectrum is now used in the quantitative analysis preferably employing a CLS method from which is generated a new concentration-pathlength product (CL) and MDL.

then

Col. 12 lines 6-10:

spectrum. The data from the quantitative analysis step, i.e., the various concentration-pathlength products and MDL's for each of the reference spectra are then compared, and the data which most closely fits the expected CL product and MDL is chosen for output.

, which is simulated sensor output.

e. Applicants argued:

Regarding claim 31,

neither Flanigan nor Wang et al. appear to teach a sensor response removal module. The detector array of Flanigan appears to be two detectors used in tandem, but does not appear to provide a sensor response removal module.

In response, Wang et al teaches:

Col. 13 lines 60-63:

shown in FIG. 12. The signal processing procedure consists of bias removal, phase error correction, computing absorption spectrum, CLS quantitative analysis and final detecting of chemical agents. The outputs of the signal processing procedure are the detection (including CL and MDL) and false alarm probabilities.

also

scans with the field of view blocked. Using a second-order correction term in the linear regression model will compensate for the difference. FIG. 14b shows the spectrum after the bias is subtracted. FIG. 14c shows the spectrum after subtracting both the bias and linear terms. FIG. 14d shows the

10. Examiner finds applicants argument unpersuasive and rejection is maintained.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claim 7-9 and 23-32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed invention recites a "computer system" which is nowhere specified in the disclosure.

Claim Rejections - 35 USC § 101

13. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

14. Claims 7-9 and 23-32 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims do not seem require any hardware to perform their functions. A claim that recites a piece of software alone without any link to a hardware component is directed to non-statutory subject matter since there is no relationship between the computer software and hardware components which permit the functionality of the software to be realized.

The specification does not provide any disclosure to hardware components to support that the invention includes any hardware to produces its functions.

Further, the claims invention describes a simulation "device". However, there is nothing in the claim or in the specification that defines these devices, or any of the other components describes, as being hardware or being linked to hardware. As such, this device can be considered a software program per se and is therefore non-statutory (IEEE definition for device: (Software) a mechanism or piece of equipment design to serve a purpose or perform a function).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 2128

16. Claims 7-9, and 23-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,266,428 issued to Flanigan et al., in view of US patent No. 5,982,486 issued to Wang et al.

Claims 1-4. (Canceled)

Claims 5-6. (Withdrawn)

Claim 7.

Flanigan discloses a simulator system comprising:

a chemical agent detection environment simulation device (**See: Col. 3 lines 12-15; Fig. 20**);

a user interface (such as ***display screen or other visual output device or other input device***; **See: Col. 12 lines 15-18; Fig. 20 blocks 19, 21, and/or 23**) connected to the chemical agent detection environment simulation device (**such as ...*signal processor 17*...**; **See: Col. 12 lines 50-51; Fig. 20**);

a numerical computing tool (such as ***mathematica program or other suitable software***; **See: Col. 7 lines 2-5**) connected to the chemical an agent detection environment simulation device; and

an atmospheric transmittance and radiance model (such as...***background and atmospheric transmittance*** ...;**See: Col. 7 lines 2-5**) connected to the chemical agent detection environmental simulation device.

Flanigan fails to disclose a background measurement environment interferogram source.

Wang discloses a background measurement environment interferogram source
(**See: Col. 4 lines 40-44; Col. 7 lines 11-21; Fig. 5, Fig. 6**).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Wang et al with Flanigan et al because both references are clearly concerned with chemical agent detection. The motivation for doing so would have been convenient to a background measurement environment interferogram source such as FTIR spectrometer, as taught by Wang et al, for system of Flanigan et al to remotely detecting and discriminating hazardous clouds in a field of view (See: Flanigan et al, Col. 3 lines 40-43).

Claim 8.

Flanigan discloses the system of claim 7, further comprising an ancillary information source (such as ***ambient temperature blackbody***; **See: Col. 10 lines 49-51**) connected to the chemical agent detection environment simulation device.

Claim 9.

Flanigan discloses the system of claim 8, wherein: files may be input to the atmospheric transmittance and radiance model from the chemical agent detection simulation device environment (**See: col. 7 lines 2-5**); and

atmospheric model information may be input to the chemical agent detection environment simulation device from atmospheric transmittance and the radiance model (**See: Col. 12 lines 60-67**).

Claims 10-22. (Withdrawn)

Claim 23.

Wang discloses the system of claim 7, wherein the chemical agent detection environment simulation device includes simulated sensor output (such as ...***the saturation condition detected by sensor (i.e. spectrometer) is simulated using 1000ppm-m...(See: Col. 11 lines 45-52) ...then a detection report is given, which is interpreted as "simulated sensor output"*** See: Col. 13 lines 40-43; Table 43).

Claim 24.

Flanigan discloses the system of claim 23, wherein the numerical computing tool is configured to test the sensor output with one or more algorithms (See: Col. 7 lines 2-7).

Claim 25.

Flanigan discloses the system of claim 7, further comprising a cloud radiance and transmittance module (such as ***background and atmospheric transmittance ...;See: Col. 7 lines 2-5***).

Claim 26.

Flanigan discloses the system of claim 7, numerical computing tool is a Matlab® module (such as ***mathematica program or other suitable software; See: Col. 7 lines 2-5***).

Claim 27.

Flanigan discloses the system of claim 7, wherein the atmospheric transmittance and radiance module is a MODTRAN module (such as ***MODTRAN; See: Col. 7 lines 2-5***).

Claim 28.

Flanigan discloses the system of claim 7, wherein the chemical agent detection environment includes: an input stage (such as **...spectral data...**; See: Col. 13 lines 6-8); a preparation stage (such as **...normalization**; See: Fig 13A and Fig. 13B); a calibration stage (See: Col. 10 lines 49-51); and a simulation stage (such as **...signal-to-noise ratio (SNR)...**; See: Col. 7 lines 15-17); and wherein the simulation stage comprises:

a background spectrum (such as **...background spectrum...**; See: Col. 7 lines 2-3); an atmospheric model (such as **...atmospheric model...**; See: col. 7 lines 7-10); a cloud model (such as **hazardous clouds**); and a simulated spectrum builder (such as **...visual output device**; See: Col. 12 lines 50-53; Fig. 20 Block 21).

Claim 29.

Flanigan discloses the system of claim 28 wherein the calibration stage comprises: computing an ambient blackbody spectrum (See: Col. 10 lines 49-51); computing a theoretical ambient blackbody spectrum (See: Col. 10 lines 49-51); and computing a calibrated background spectrum (See: Col. 7 lines 2-3).

Claim 30.

Wang discloses the system of claim 29, wherein the calibration stage is configured to compute an LN2 reference spectrum (See: Col. 10 lines 36-44).

Claim 31.



Flanigan discloses the system of claim 7, further comprising a sensor response removal module (such as **detector array 15...**; **See: Col. 12 lines 40-41; Fig. 20 block 15**).

Claim 32.

Flanigan discloses the system of claim 31, further comprising a field data source and a sensor response source each connected to the sensor response removal module (**See: Col. 13 lines 60-63; Fig. 12**).

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

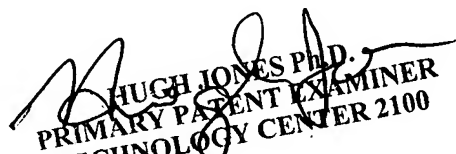
Communications

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kibrom K. Gebresilassie whose telephone number is 571-272-8571. The examiner can normally be reached on 8:00 am - 4:30 pm Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on 571-272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KG


HUGH JONES PH.D.
PRIMARY PATENT EXAMINER
TECHNOLOGY CENTER 2100